

REMARKS

Claims pending in the instant application are numbered 1-20. Claims 1-20 presently stand rejected.

Claims 1, 11, 15 and 16 have been amended. Claims 21-23 have been added. The Applicant respectfully requests reconsideration of the present application in view of the amendments and the following remarks.

35 U.S.C. § 112 Rejections

Claims 5 and 6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, claim 5 has insufficient antecedent basis for the limitation “the packet processor unit.” As a dependent claim, claim 6 suffers from the same deficiencies as claim 5.

The Applicant respectfully submits that “the packet processor unit” of claim 5, and consequently claim 6, has antecedent basis from “a packet processor unit” as recited in the preamble of claim 3. Therefore, the Applicant respectfully requests that the § 112 rejections to claims 5 and 6 be withdrawn.

35 U.S.C. § 103 Rejections

Claims 1, 2, and 16-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang et al., U.S. Patent No. 6,385,672, in view of Bechtolsheim et al., U.S. Patent No. 6,343,072. Claims 11-13 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Bechtolsheim and in further view of Davidson, Jr. et al., U.S. Patent No. 5,550,957. Claims 3-10 and 18 are rejected under 35 U.S.C. § 103(a) as being

unpatentable over Wang and in further view of Hasan, U.S. Patent No. 6,044,416. Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Bechtolsheim and Davidson and in further view of Hasan.

Claims 1-10 and 16-20

Claim 1 as presently amended expressly recites:

“a state-machine-based network protocol unit disposed on an integrated circuit, the network protocol unit having state machines to control other units of the integrated circuit and to process a network protocol corresponding to data throughput through the integrated circuit, wherein the network protocol is processed without software support” (emphasis added).

The Examiner's attention is directed to at least page 6, lines 13-25, of the specification as originally filed.

Wang is directed to buffering data in a single buffer memory which can be flexibly partitioned into separate transmit and receive buffers (Abstract). Network interface card (NIC) 120 connects bus 100 to data network 110 (col. 4, lines 44-67). Wang discloses that the configuration of memory 200 of NIC 120 is done through execution of software instructions (col. 11, lines 24-26).

Wang discloses that controller 125 coordinates the activities of bus interface 121, memory 200 and MAC interface 122 to facilitate the transfer of data between bus 100 and data network 110 (col. 4, lines 59-62). Wang discloses that controller 125 of NIC 120 may not include a microprocessor and may be implemented using a standard cell ASIC (col. 4,

lines 65-67). However, Wang does not disclose that network protocol processing is done by controller 125. Thus, Wang fails to disclose, teach, or fairly suggest “wherein the network protocol is processed without software support” as expressly claimed by the Applicant.

Bechtolsheim is directed to single-chip architecture for a shared memory router. Router 110 includes a set of internal memory and internal processing circuits integrated into a single monolithic integrated circuit on a silicon die (col. 2, lines 45-50). Input MAC circuit 161 receives packets (col. 3, lines 3-10) and output MAC circuit 171 transmits packets (col. 3, lines 29-37). However, Bechtolsheim fails to disclose that network protocol processing is done without software support as expressly claimed by the Applicant.

Further, Bechtolsheim suggests processing of a packet is done by software instructions. Bechtolsheim discloses that extraordinary processing of a packet at router 110 may be done by processor 130 (col. 4, lines 42-50). The Applicant submits that processing of a packet by processor 130 suggests that such processing is done by software instructions executing on processor 130. Also, Bechtolsheim discloses that method 200 is executed cooperatively by router 110, memory 120 and processor 130 (col. 4, lines 58-60). The Examiner is respectfully reminded that the prior art must be considered as a whole, including disclosures that teach away from the claims (MPEP § 2143.03). Bechtolsheim’s suggestion that packet processing is done by software executing on processor 130 leads away from “wherein the network protocol is processed without software support” as expressly claimed by the Applicant.

Thus, Wang and Bechtolsheim fail to disclose, teach, or fairly suggest at least one of the expressly recited limitations of claim 1. Accordingly, the present invention is not rendered obvious by the cited references. Independent claim 16 distinguishes for at least the same reasons as claim 1. Claims 2-10 and 17-20 are dependent claims and distinguish for at least the same reasons as their independent base claims in addition to adding further limitations of their own. Therefore, the Applicant respectfully requests that the instant § 103 rejections to claims 1-10 and 16-20 be withdrawn.

Claims 11-15

Claim 11 as presently amended expressly recites:

“a state-machine-based network device control component coupled to the packet processor unit, the network device control component having state machines to control transmission of packet data from the integrated circuit to the network device and reception of packet data from the network device to the integrated circuit, wherein the packet processor unit includes a hardware version of a software device driver for the network device”
(emphasis added).

The Examiner’s attention is directed to at least page 6, lines 9-12, and page 9, lines 7-18, of the specification as originally filed.

The Applicant submits that both Wang and Bechtolsheim fail to disclose, teach, or fairly suggest “wherein the packet processor unit includes a hardware version of a software device driver for the network device” as expressly claimed by the Applicant. Accordingly,

claim 11 is not rendered obvious by the cited references. Claims 12-15 are dependent claims and distinguish for at least the same reasons as their independent base claim in addition to adding further limitations of their own. Therefore, the Applicant respectfully requests that the instant § 103 rejections to claims 11-15 be withdrawn.

New claims 21-23

New claims 21-23 depend from allowable independent claims 1, 11 and 16, respectively. Thus, new claims 21-23 are allowable for at least the same reasons as their independent base claims in addition to adding further limitations of their own. The Examiner's attention is directed to at least page 6, lines 20-25, of the specification as originally filed for support of new claims 21-23.

Conclusion

The Applicant submits that in view of the amendments and remarks set forth herein, all pending claims are in condition for allowance. Therefore, the Applicant respectfully requests the Examiner to issue a Notice of Allowance in this case.

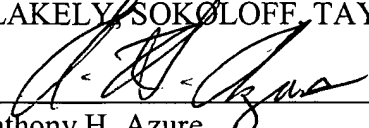


Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,
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